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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/974,969	10/11/2001	David W. Boerstler	AUS920010608US1	8113

7590 12/05/2003

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EXAMINER

KINKEAD, ARNOLD M

ART UNIT	PAPER NUMBER
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2817

DATE MAILED: 12/05/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/974,969	Applicant(s) BOERSTLER ET AL.	
	Examiner Arnold M Kinkead	Art Unit 2817	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 July 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 9-24 is/are allowed.
- 6) ☒ Claim(s) 1,3,4,7 and 8 is/are rejected.
- 7) ☒ Claim(s) 2,5 and 6 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☒ Other: Please submit all related serial #'s

Art Unit: 2817

DETAILED ACTION

* Please submit all related serial numbers...^{related}~~depending~~ with this application. The examiner has reconsidered the reference to Leonowich and a rejection based on this reference alone follows.

Claim Objections

1. Claims 18 and 19 are objected to because of the following informalities: The claim dependency should be corrected to be from a lower numbered claim. These claims should depend from claim 17. Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the

Art Unit: 2817

time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1,3,4,7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leonowich (US

5,434,525) *by record*

Leonowich discloses a PLL with ring oscillator(multi-mode VCO)(see figures 1 and 3) with differential phase detector coupled to the ring oscillator(see figure 5) to allow for the frequency control as desired(via VCN,VCP mode control signals. The VCO is a ring oscillator comprising an odd number of inverters(11); a forward conduction circuit including (14,15) with first input connected to the oscillator input and having stages coupled in parallel to selected sequence of logic inverter gates (3 inverter logic gates shown(11))in the oscillator(see figure 1) is shown(please note examiner is defining the three inverter stages as the selected sequence). The forward conduction circuit has first inverter input(see input to 14)coupled to Nth(1st) logic inverter gate input and the first inverter output connected to the inverter logic output. This forward conduction circuit comprises a control inverter (14) with second input and second output, a bi-directional conduction circuit shown(15) with third input/third output, first mode control signal(Vcn)connected to first control input and second mode control (Vcp)connected to second control input are shown. These affect the frequency range of the oscillator. Figure 3 shows NFET and PFET transistors are shown for use in the bi-directional conduction circuit.

The reference by Leonowich does not show more than 3 inverter stages, however, the use of more stages is conventional for ring oscillators depending on the frequency of oscillation desired and official notice is taken with this.

Art Unit: 2817

In light of the above it would have been obvious for one of ordinary skill in the art at the time of the invention to have modified the 3 stage ring oscillator of Leonowich with more stages so as to affect the desired oscillation frequency, as is notoriously well known; official notice is taken with respect to this. Again, the oscillator frequency is affected by the number of delay stages in the ring and this concept is conventional.

Response to Arguments

5. Applicant's arguments with respect to claims previously rejected have been considered but are moot in view of the new ground(s) of rejection.

Allowable Subject Matter

6. Claims 9-24 allowed.

7. Claims 2,5, and 6 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Art Unit: 2817

The examiner could not find fair suggestion for the PLL based ring oscillator with CPU clock signal generation in addition to all else claimed(see claim 9), and for claim 17, no suggestion for the differential charge pump with first and second capacitances in addition to all else claimed. The prior art Chow reference, relied on previously, teaches away from the PLL based oscillator as noted by applicant in the remarks. No suggestion for the electronic switches as claimed in claim 2 as well.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Arnold M Kinhead whose telephone number is 703-305-3486. The examiner can normally be reached on Mon-Fri, 8:30 am -5 pm.(new number after Jan. 15, 2004 571-272-1763)

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Pascal can be reached on 703-308-4909. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7724 for regular communications and for After Final communications.(New fax after Jan. 15, 2004 571-273-1763)

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.


Arnold M Kinhead
Primary Examiner
Art Unit 2817

Arnold Kinhead

11-24-03